Scientific evidence supporting Bednarsek, et al. (2014) estimate that dissolution has doubled since pre-industrial conditions and on track to triple by 2050:

- Direct measurements on ocean time-series stations in the North Atlantic and North Pacific record decreasing pH with rates ranging between –0.0014 and –0.0024 per year (IPCC, 2013)

- Bednarsek, et al. (2014) hindcasts and forecasts are based on a series of modeling efforts using the ΔC* method that has been applied successively from global ocean estimates (Gruber et al., 1996; Sabine et al., 2004) to Pacific continental shelf estimates (Feely et al., 2008) to the coastal upwelling zone (Harris et al., 2013). The ΔC* method requires a calculation of the following expression:

  $DIC_{anth} = DIC_{obs} - \Delta DIC_{bio} - \Delta DIC_{eq} - \Delta DIC_{diseq}$

  Where,

  DIC_{anth} = estimated amount of anthropogenic dissolved inorganic carbon in the seawater sample

  DIC_{obs} = measured dissolved inorganic carbon in a seawater sample

  DIC_{bio} = estimated amount of biologically-produced dissolved inorganic carbon in the seawater sample. Calculated based on measured values of chemical proxies (O, N) and stoichiometry (O:N:C) of organic matter.

  DIC_{eq} = estimated amount of dissolved inorganic carbon in the seawater when it was in equilibrium with the atmosphere at its last in contact with the atmosphere. Calculated using (1) estimated time of travel from mid-ocean surface origin to sample location, (2) a back-estimate of atmospheric CO2 at that time, and (3) equilibrium constants for air and seawater.

  DIC_{diseq} = estimated amount of dissolved inorganic carbon in seawater representing its disequilibrium with the atmosphere at its last in contact with the atmosphere